

HAMADRYAD



Silent Valley in Kerala, the rain forest home of many endemic reptiles and amphibians may soon be submerged

NEWS FROM THE MADRAS SNAKE PARK
AND MADRAS CROCODILE BANK

The latest state to become interested in establishing a snake park is Gujarat. To this end the MSP Director, on request from the Gujarat Forest Department, visited the Gandhinagar site in June to advise on planning and layout.

It is heartening that the Tamil Nadu state government has now responded most conscientiously to the Snake Park's plea for a cooperative for the Irula tribals. This independent institution will soon be officially registered. We have long felt that such a cooperative alone would allow the Irulas to continue traditional activities such as honey collecting and snake catching while ensuring them security in the way of insurance, medical aid etc (see page 6).

The Snake Park's Field Officer, Satish Bhaskar did an island survey off the Gulf of Kutch in Gujarat during June-July. The island beaches are vital nesting grounds for the Olive Ridleys and Green sea turtles; and the area has gained additional importance from occasional sightings of Dugong (see page 9).

Several student volunteers at the MSP have begun work on a preserved reptile reference collection to be housed in the Snake Park.

In June of this year the MSP initiated a wildlife essay competition for school children. To date over 700 entries have been received.

During the summer vacation MSP volunteers conducted regular nature walks in the Guindy Deer Park for young students.

The Crocodile Bank was featured in a Madras television film about the Mahabalipuram coast.

The Manager of the Crocodile Bank spent a week in Mudumalai Sanctuary on the Moyar river and Amravathi reservoir in order to identify areas where mugger may be released. The Crocodile Bank has over 50 surplus captive bred 3 year olds which are being offered to the Forest Department for release programmes.

The Crocodile Bank's funds having hit a new low, we have begun our own fishing operations to cut down on feeding costs. Our two catamarans ply in the sea off the Mahabalipuram coast as well as in the Kovalam backwaters, and catches (mostly cat-fish and mullet) average about 10 kgs a day.

6 mugger nests totalling 150 eggs were laid in the Mugger Breeding Pit at the Crocodile Bank, and were all transferred to incubation boxes and hatched for an average of 57%. The 85 hatchlings are being reared on insects, chopped fish and frogs in a separate enclosure not accessible to visitors.

HERP NEWS

Python Axed to Death

A villager at Marthur... killed a python, measuring about 15 feet, with an axe. It is said that at about 6.30 p.m. the python sneaked out of a bush and attacked a goat. The villager, who was passing by, heard the screaming of the goat and went to its rescue. He killed the python with his axe. The python was taken in a bullock cart to Chitapur for demonstration (Indian Express, 31 May '78).

2 Baby Crocodiles Found in Powai Lake Banks

Naturalists in (Bombay) are delighted with the retrieval of... nine freshly hatched marsh crocodiles from the nest on the banks of Powai lake, Bombay. The mother crocodile was observed to lay her eggs in a shallow... nest on March 25. The young emerged exactly 74 days later... There were a total of 17 eggs... of these, nine hatched and the young have been captured, three eggs proved infertile and three more are still in the nest. It is believed that the remaining two eggs hatched and the young got away into ~~xxxx~~ the lake. It is estimated that there are about 12 to 14 crocodiles left in the lake... Powai lake, once described by the noted ornithologist, Dr. Salim Ali, as the El Dorado of bird watchers, is facing other problems, which are helping destroy its natural ecosystem. The denuded hills of Uhatkogar and the surrounding areas result in tonnes of silt flowing into the lake with the onset of the monsoon. This large-scale silting has reduced the capacity of the lake considerably (Times of India, 12 June, '78).

Vaccine Against Sea Snake Poison Developed

The Haffkine Institute have developed a curative vaccine for sea snake poisoning. The antidote is considered a major breakthrough in protecting fishermen, divers and naval personnel. In India... no statistical data was available on sea snake poisoning though unofficial reports revealed that numerous cases were to be found in Goa, the Andaman islands and along the Ratnagiri and Kolaba coasts. In Orissa, the mortality rate from sea snake bites was 25 percent. (Times of India, 2 June '78).

Editor's note: At about the same time the above news item was published, there appeared in the papers a dead-pan report of a girl dying of snakebite in a Bangalore hospital because ordinary polyvalent antivenom was not available. This irony hardly requires comment; and while we are patting ourselves on the back for developing sea snake antivenom (sea snake deaths number not more than a few a year) thousands will continue to succumb to commoner dangerous snakes all over the country for lack of sufficient polyvalent antivenom.

Crocodile Pair Does it Again

The 50 year old pair of crocodiles at the Jaipur Zoo has done it again. They have brought into being 31 young ones recently and have bred for 12 years in succession. The survival rate was 88%... During the 12 years the pair has laid 375 eggs. (Hindu 31 July '78).

REPTILES IN INDIAN MYTHOLOGY

The occasional herpetologist has expressed an interest in Indian reptile myths; hence this unzoological intrusion, which is offered under the nervous heading of Light Relief. It is possible though, that these legends will make it easier to understand the very contradictory attitudes about snakes which are current in the country today.

The first attribute of snakes which has become material for myth is their close connection with the earth. The Sanskrit word for serpent, Shu-jag, is a compound meaning 'born of the earth'. Snakes, then, are thought to dominate the underworld, which in Indian legend is not such a bad place to dominate. It overflows with wealth and jewels, and snakes in their resplendent places possess the best gems in the three worlds (heaven, earth and underworld). They wear these in their hoods, as several visitors to the Snake Park know for a certainty. These powerful rulers of the nether world have five, seven, or nine hoods, and are called Nagas, which is still the Hindi name for the Indian Cobra Naja naja.

Being born of the earth, it follows that snakes share the lifegiving powers of the earth, and the fact that they slough off their skins has given them a reputation of being magically self-rejuvenating. For aeons they have been worshipped as bringers of life and fertility. In South India it is a common sight to see flat-hewed stones with snake motifs carved on them - Nagakals or snake stones - made as sacred offerings by women who hope to have children. These are mossed together near temple ponds or under pairs of Peepul or Neem trees (Ficus religiosa and Azadirachta indica) which represent marriage. Moving a step closer to Freud, it is not surprising that the mystic Tantric cult considers the snake a powerful symbol of sexual and cosmic energy. In Tantra the 'subtle snake' Kundalini is supposed to sleep coiled at the base of the human spine and ascend as spiritual energy awakens.

More respectable metaphysical speculation has also been drawn to the image of the snake. A snake with its tail in its mouth has seemed to represent eternity, as the figure thus formed has neither beginning nor end. So it is that the king of the Nagas is called An-anta, which means 'un-ending'. Being eternal, he is closely associated with the god Vishnu, the Preserver of the Universe, who stretches out on him for a bit when he has no pressing godly duties. The serpent's nine expanded hoods protect the god's head. Ananta was also with Vishnu during one of his ten incarnations upon the earth, when he was born as the child Krishna. The story goes that the baby Krishna has to be taken to safety across a river on a stormy night, and Ananta protected him from the storm with his gigantic hoods. There is a similar story in Buddhism, which is significant because worshippers of Vishnu expend much energy in making the Buddha out to be one of the incarnations of Vishnu. According to this, as soon as the meditating Buddha reached enlightenment a storm gathered and threatened to break his peace, but a serpent called Muchalinda coiled his body round the Buddha seven times, spread his hood above him, and allowed him to continue meditating for seven days.

Ananta remains with Vishnu even during the periodic destruction of the world. As soon as the world is washed away, say the scriptures cheerfully, the serpent will act as a raft for Vishnu to float on the primeval waters till creation is effected again. While creation is in existence, it is his hoods which support the world and the heavens, and he himself is coiled on the back of a gigantic tortoise floating on cosmic waters. This is why several temples, in the centre of the floor, have a small unexpected carving of a tortoise, and many an unwary tourist has come to grief on this while admiring the temple ceiling.

I believe that in several mythologies the serpent and the eagle are 'inseparable' antagonists. In Mesopotamian (and Mexican?) myth a fabulous bird carries on permanent warfare with a fabulous snake. In Greek mythology the King of Heaven, Zeus, rides on an eagle and his consort Hera, or Mother Earth, is attended by serpents. Many episodes delineate the hostility between the two. The same classical opposition obtains in Hinduism. Although Vishnu reclines on a snake, his official vehicle through the air is an eagle, or 'Sun-bird' called Garuda, who has an implacable hatred of serpents, and is called Nag-antaka or Bhujagantaka, 'Devourer of Snakes'. The word Garuda comes from the root 'griha' meaning to swallow (snakes). (Its colours, scarlet and white, are suspiciously akin to those of the Brahminy Kite Haliastur indus and it has been suggested that this is why Brahminy Kites are never killed, and are encouraged to feed near temples).

The serpent-eagle motif must of course originate partly in ordinary observation, in the stirring sight of an eagle swooping through the air with a snake. But possibly the image is so widespread because it embodies, with exquisite economy, the eternal opposition between heaven and earth - between the free, unbounded spirit of ether and the tenacious, self-absorbed processes of the earth. It is typical that Hindu mythology, with its love of reconciling opposites, should combine these two principles in Vishnu.

Popular folk-lore of course has a healthy disregard for such irrelevances. Garuda is mainly worshipped because, as chief serpent-killer, he has a magic power against snake poison. In the town of Puri, in Orissa state, people with snakebite are taken to a temple which has a pillar shaped like the eagle, and are made to cling to it. Another popular belief about the two concerns the forked tongues of the snakes. It is said that the serpents once won a round against Garuda when they kidnapped his mother and spirited her away to the underworld. They then demanded that the eagle bring them a cup of ambrosia - the nectar of immortality - as ransom, and Garuda went to obtain this. As he was handing it to the snakes, naturally, another god snatched the cup and ran off, and that was that. But some of the snakes did manage to lick up a few drops that fell to the ground, and became immortal. At the same time the power of the drink cleft their tongues, and left them with forked tongues for the rest of their immortal life.

There is another very well known story concerning ambrosia and a snake. At one stage in the history of the universe this useful liquid was not available, and the gods realized that they should have to churn the Ocean of Milk, to get

ambrosia from the ocean bed. Their own strength was not enough for this, so they decided they must ask the help of their enemies the demons, and regretfully cheat them out of the nectar at the end. A mountain was found for the churning -stick, and a giant serpent called Vasuki was hauled out of his underwater siesta and commanded to be a churning-rope. Vishnu then told the demons that it would be easier to churn with the tail end of the 'rope'. On the fairly sound principle that no god can speak the truth, the demons insisted on churning with the head end, and this was exactly what Vishnu wanted. The demons had to contend with the poisonous breath from the serpent's mouth, while the gods were fanned by light ocean breezes. At one point Vasuki vomited forth so much poison that it threatened to destroy the world, but the god Shiva swallowed it, and turned his own throat blue in the process. After this pleasant little exchange Vasuki was^a purified serpent, and henceforward was worn by Shiva as a girdle, and had the honour of helping him to kill demons.

Meanwhile the ambrosia was found, and a nasty scrap between gods and demons seemed about to result. But Vishnu with great presence of mind turned himself into a beautiful woman, and rapidly dazzled the demons out of their few wits. He then made off with the nectar, and virtue triumphed in peace. This story is commemorated in Indian astronomy, where a long constellation (the Western Hydra) has been named after Vasuki.

Another reptilian sidelight on the same story is that at one point in the churning the mountain seemed to be sinking into the soft ocean bed; Vishnu then assumed the second of his incarnations, and descended to the earth as a tortoise, or kurma. He dived under the mountain and his back formed a pivot, whereupon the churning could continue. Incidentally Vishnu's incarnations follow a rudimentary Darwinian order - he was a fish, then tortoise, then a boar, a half-lion, and so on.

Another very familiar serpent in India mythology is Kaliya a wicked snake with ten heads which lived in a river. After a distinguished career as a demon - his poisonous breath destroyed everything around him - he came up against the child Krishna, who danced on his heads, and to cut a long story short overcame him. Other familiar snakes are the three that twine themselves round the god Shiva, one above his head, one round his neck, and a third as a girdle. Shiva's ear-rings are also made of snakes. Perhaps these snakes help to add to Shiva's image as the Destroyer, the^a Hunter of cemeteries and Lord of Ghosts and Goblins. As Shiva's consort, the Mother-Goddess Kali also wears a girdle and necklace of snakes.

Finally we have the goddess Manasa, the sister of Ananta, who is widely worshipped in Bengal and invoked against snake-bite. There is a legend that she once sent seven snakes to kill a man whom she hated, but six of them were propitiated by the man's wife. Perhaps this has something to do with the widespread belief that snakes drink milk. Certainly during the North Indian festival of Nag-panchmi, when snakes are caught and worshipped, most people attempt to trickle milk down their throats.

It would be highly unscientific to end without a mention of crocodiles. Here we can offer a sea-monster called Makara, vehicle of Varuna, who is a demoted and abashed god of the seas. This is a conglomerate creature with a deer's head and antelope legs. The Goddess of the Ganges is sometimes said to ride a Markara, but I have seen her represented on a perfectly decent crocodile. And of course the Sanskrit word makar means crocodile and is the ancestor of "Mugger".

This is very brief outline of some of our best-known reptile myths, and drawing any conclusions from them would be a slippery business. One cannot help observing however, that snakes in these legends are to be deeply venerated or violently feared, but in no case are they familiar or lovable.

References:

The Dance of Shiva by Ananda Coomaraswamy
Myths and Symbols in Indian Art and Civilisation by H. Zimmer
Indian Mythology by Veronica Ions

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IRULA SNAKE-CATCHERS INDUSTRIAL COOPERATIVE SOCIETY

After several years on the anvil, a cooperative to help the Irula tribals has finally been formed with the support of the Department of Industry and Commerce of the Tamil Nadu Government. 25 to 50 family heads will be registered initially with gradual expansion throughout Chinglepet District (where 100,000 Irulas live in scattered clans). The Irulas will be provided with markets for snakes (for antivenom production) and venoms (for medical products and research) and biological specimens for schools and colleges.

The cooperative's objectives include long term study of wildlife species under exploitation including snakes for the skin industry. Other further plans include wildlife husbandry such as fish, frog, python, monitor lizard and crocodile farming, deer ranching, etc. As field work in environmental studies gains momentum the Irula hunters will become invaluable Field Assistants, naturalist technicians with decades of practical experience.

Subscribers may be familiar with the fact that India's last magnificent stretch of evergreen forest, Silent Valley in Kerala, faces ruin by a hydro-electric project. Among its unmatched fauna are several rare and endangered species including the King Cobra and Rock Python. The reasoning behind the project is heartbreakingly trivial (Kerala has no need of hydro-electric power, but suppose it does in the future? etc) and the main motivation is only political. If you cannot sit back and watch this happening, we ask you to join us in the fight for Silent Valley. Below is a draft which covers the main facts of the case. We appeal that you either recopy or vary this, sign it, and send it to the Prime Minister immediately. In the past, strong public opinion has saved several important areas, and it is not absolutely too late to hope that it can do the same for Silent Valley.

* * *

The Honourable Prime Minister Moraraji Desai
Prime Minister Secretariat
South Block
New Delhi 1
India

Dear Mr. Prime Minister:

It is with the deepest regret that we learn of the proposed hydro-electric project in Kerala's Silent Valley, which will destroy the unparalleled rain forest of the area. We particularly fail to understand why it is so essential to have a hydro-electric project, when in fact officers of the Electricity Board agree that a thermal power station north of Cannanore would be a feasible alternative. We recognise of course that the financial costs of a thermal power station are considerably higher than that of a hydro-electric one, but the ecological costs of destroying Silent Valley will be incalculable.

You will recall that the International Union for the Conservation of Nature and Natural Resources has appealed to all countries fortunate enough to possess rain forest, to protect it rigorously. In its statement the IUCN points out that rain forest is "the richest expression of life that has evolved upon this planet. In some areas there has been a continuous history, on much the same site, for about 50 million years - since the flowering plants began to evolve ... New and valuable uses for organisms are constantly being discovered in medicine, pest control and in the breeding of economic plants and animals, and it would be blind and irresponsible to destroy the source of so much potentially valuable material." It is well-known that no other considerable stretch of rain forest remains in the country, and that Silent Valley's rich and complex habitat harbours many rare and endangered species of mammals, birds, reptiles and plant life.

We end with a most serious appeal that you consider the alternative of a thermal station. The government's very sympathetic attitude on ecological questions generally, as well as your widely-known reverence for all forms of life, makes us hope that the concerned authorities will now be able to make a courageous change of decision.

(7)

Yours faithfully,

MASS SLAUGHTER OF SEA TURTLES

T A Davis and Rajesh Bedi have very disturbing news about the widely publicized sea turtle rookery (one of the world's largest) at Gahirmatha in Orissa state. Their report, published in the Jan-March '78 issue of "Environmental Awareness" states that though the '76 nesting season (Jan-March) brought over 1,58,161 nesting female Lepidochelys olivacea ashore, not a single turtle nested on this beach in '77. The authors visited Gahirmatha on 12 February of this year, and saw hundreds of Riddleys carcasses on the beach. Forest officials counted 478 dead turtles on a 14 km coastal stretch.

The carcasses, of both males and females, were 7-10 days old, and the fore-flippers of some were tied with wire. It is obvious that launches were responsible for this slaughter and the rotting animals at Gahirmatha must have been abandoned turtles that had died on board due to overcrowding and suffocation. The total number of Riddleys' captured (apparently while mating) must be staggering.

This report again brings home the question of whether it is wise to publicize the habitats, nesting locations etc. of commercially valuable and endangered animals such as sea turtles. (In '76, several newspapers carried extensive reports about this nesting beach, which incidentally lies within the Bhitarkanika Wildlife Sanctuary).

The Forest Department alone cannot handle this problem since the poachers have power launches operating several miles offshore. The Fisheries and naval personnel could provide valuable assistance in apprehending poachers and it is hoped that this possibility will be seriously investigated and implemented well before the '79 nesting season begins.

SATKOSHIA GORGE GHARIAL SANCTUARY

This year no egg incubation or hatchling collection programme will be undertaken at the Satkosha Gorge Sanctuary in Orissa. 72 gharial have been released into the Mahanadi during '77 and '78. 78 juveniles are now being reared to be released in February '79.

EGG COLLECTION IN THE ANDAMANS

Binod Choudhury was in the Andaman Islands in June in order to collect C. porosus eggs for the FAO/UNDP/Govt of India crocodile project. The one nest brought back will be incubated and the young reared at Hyderabad Zoo in Andhra Pradesh.

MUGGER EGG COLLECTION

In Tamil Nadu this year the State Forest Dept. succeeded in collecting over 700 mugger eggs. Hatching success was over 50%, with a total of over 800 hatchlings and juveniles now being reared at state rearing stations.

NOTES FROM THE GULF OF KUTCH

(S. Bhaskar undertook a 6 week survey in June-July '78 of sea turtles in the Gulf of Kutch on Behalf of Madras Snake Park Surveys. His account follows).

The Gulf of Kutch, because of its proximity to the Pakistan border and to smuggling havens in the middle-east, is a sensitive area. (see map) Sea turtles, oblivious to border disputes and to man's shadier activities, cruise the shallow waters of the Gulf as they have done for ages -- reproducing their kind, living off the abundant flora and fauna of the coral reefs, and filling their niche in the ecosystem of the sea, which man has only recently (as time scales go) begun to upset.

The big dead Green turtle (Chelonia mydas) which lay washed ashore among tangled mangrove roots in the Rozi swamp off Jamnagar was a reminder of our disturbing impact on sea resources. Fully four feet in length, the sea turtle had a deep gash on its neck, inflicted, in all probability, by the propeller of one of the many fishing or naval craft that ply in the Gulf waters. Of greater statistical significance is the drowning of sea turtles in trawl nets. A dead Olive Ridley (Lepidochelys olivacea) lacking superficial wounds that fetched up on the coast near Okha Madhi could have succumbed in this way.

The Olive ridleys and the Green turtle are the only species of sea turtles which are common, and nest, in the Gulf of Kutch. The Leatherback (Dermochelys coriacea) is rumoured to be sighted occasionally but evidence as to its occurrence was unobtainable.

The continued survival of these two species in the Gulf of Kutch is threatened by commercial interests, which fall into two categories: 1. The systematic collection, primarily by fishermen of the Wagri community, of the few sea turtle nests that escape predation by jackals and wild boar. The eggs are apparently sold in Okha, Mityapur and Dwarka at 25 paise each. 2. The large scale mining of beach sand (on which sea turtles nest) by cement companies. Sand mining has, in many instances, exposed the underlying water-logged silt, making it impossible for turtles to nest. Islands such as Deda, Murada, Zindada and Chinchad, which had five feet high sand dunes a decade ago, have today been reduced to sea level.

Of two inhabited and about thirteen uninhabited islands and islets in the Gulf of Kutch, significant nesting by sea turtles occurs only on Bhaidar island which is uninhabited and, predictably, is the least easily accessible (to fishermen) of those islands possessing sandy beaches. Visited only occasionally by sailboat fishermen from the mainland, the two mile long sandy beach on Bhaidar offers a largely undisturbed nesting site for Ridelys and Greens. On each of the successive nights I spent on the island, three Ridelys came ashore with intent to nest. Three clutches were actually laid, all on 16 June.

None of the Green turtle nesting pits on the island (at least 20 were discernible) were fresh; but fishermen who had laid nets across a tidal creek at the night high tide on the 16th captured three adult Greens, all females. All these were released unharmed, as turtle meat is rarely consumed in the area. Occasionally a turtle thus caught may have its flippers

hacked off to be converted into rough shoes. These flipper-hide shoes are worn by fishermen as protection against sharp coral and coral rubble. Much of the latter is invisible, buried under knee-deep silt.

Greens and Kidleys also nest on the 40 mile long sandy coast between Okha and Okha Madhi. It is very likely that they nest even further south, possibly along the entire western and southern coasts of Saurashtra. Turtles are visible from the 30ft high sand dunes on the coast near Gorinja, south of Dwarka. From any vantage point here, I could intermittently see 2 to 5 turtles at around high tide as they broke the surface for air. The date was 22nd June, 10 days after the onset of '78's early south-west monsoon.

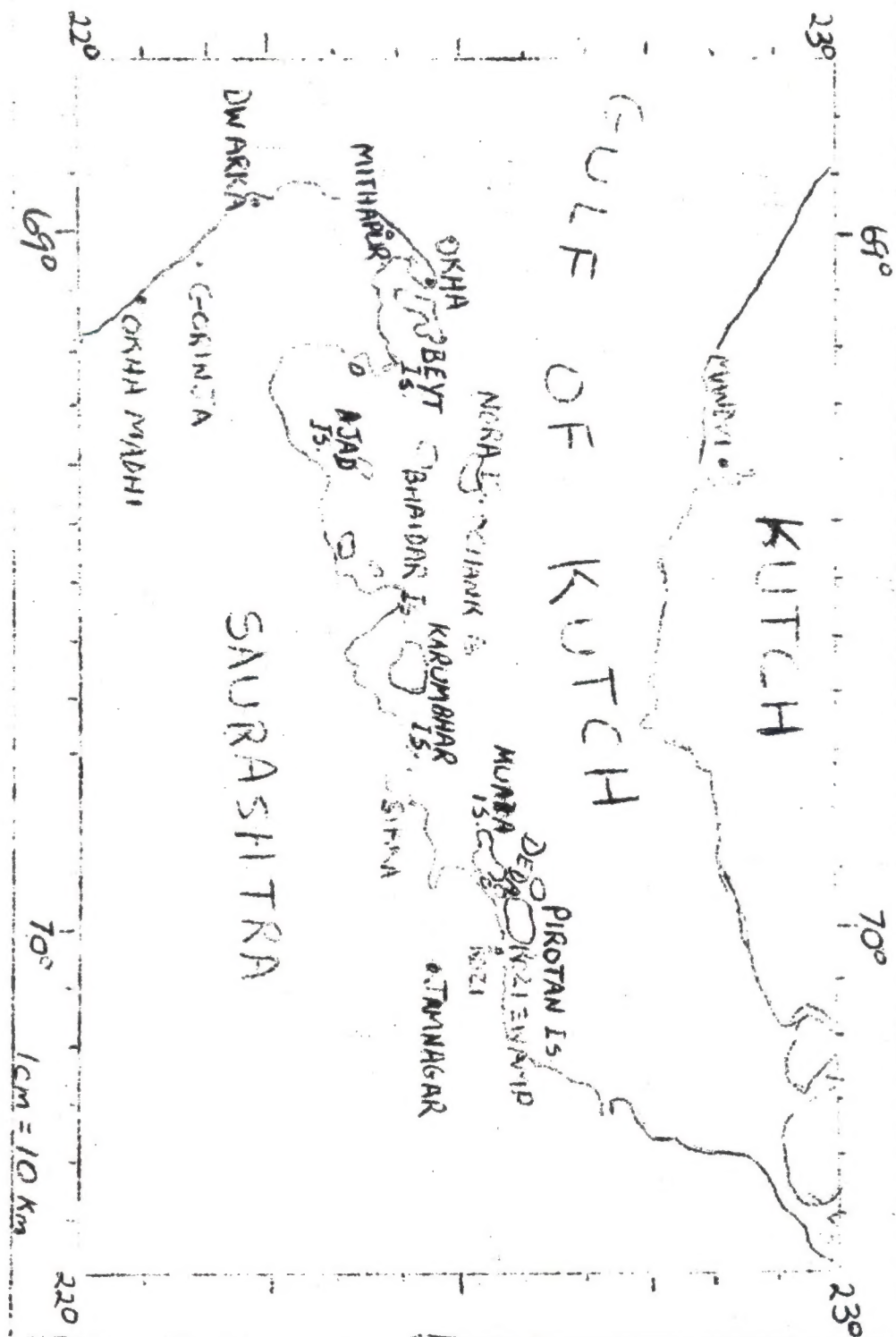
The wanton exploitation of mangroves, which are vital for the reclamation and stabilization of coastal lands, continues. Mangrove stems, used for firewood, are illegally chopped down by fishermen and sand miners. This contributes to the stunted appearance of the mangroves: rarely do they attain the height of a man. Herds of domestic camels are driven into the mangrove swamps to feed on the foliage - and even, onto nearby islands like Karumbhar at low tide; (their two month stay on the island ends when the ground water, fresh following the rains, becomes brackish).

Hacked-off mangrove stems are also laid, carpet fashion, on water-logged beaches. They serve as protection against the miring down of lorries engaged in transporting mined sand to the barges that are deliberately stranded immediately offshore by the receding tide.

On 15 June, I found the carcass of an adult male dugong as it lay decomposing on the beach on Bhaidar island. A large portion of its chest was missing, as also its tail fluke, flippers and dental array. Shark attack seemed indicated. To our knowledge, the last authenticated reports of dugong in the Gulf of Kutch date back to 1959. In that year, a dead specimen was found off the Kalyan lighthouse on 17 July and a live one captured on 30 July in the same area (Mani, 1960). The dugong on Bhaidar appeared to have died early June.

For the snorkeller and scuba diver, October-February would be the best period to visit the Gulf of Kutch islands, when the murky silt-laden monsoon seas are calm and clear.

Satish Bhaskar
Field Officer
Madras Snake Park
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HERP NEWS - Continued

Crocodile Eggs Hatching: a record

The Wildlife authorities of Nepal have set a new record in the hatching of crocodile eggs.

They had collected about 220 eggs of the rare 'Gharial' species from the banks of the Narayani river and re-buried them in sand in protective cages. As many as 147 of these were successfully hatched. The young crocodiles will be taken to the Narayani after they are two years old (July 22 '78)

Important visitors to Madras Snake Park and
Madras Crocodile Bank during the past few months
included:

Mr. Pham Van Dong - Viet Nam Prime Minister
Mr. Chandu Deshmukh - Minister of Forests, Gujarat
M.A. Rashid - Chief Wildlife Warden, Gujarat
Dr. Peter C.H. Pritchard - Vice President, Florida
Audubon Society

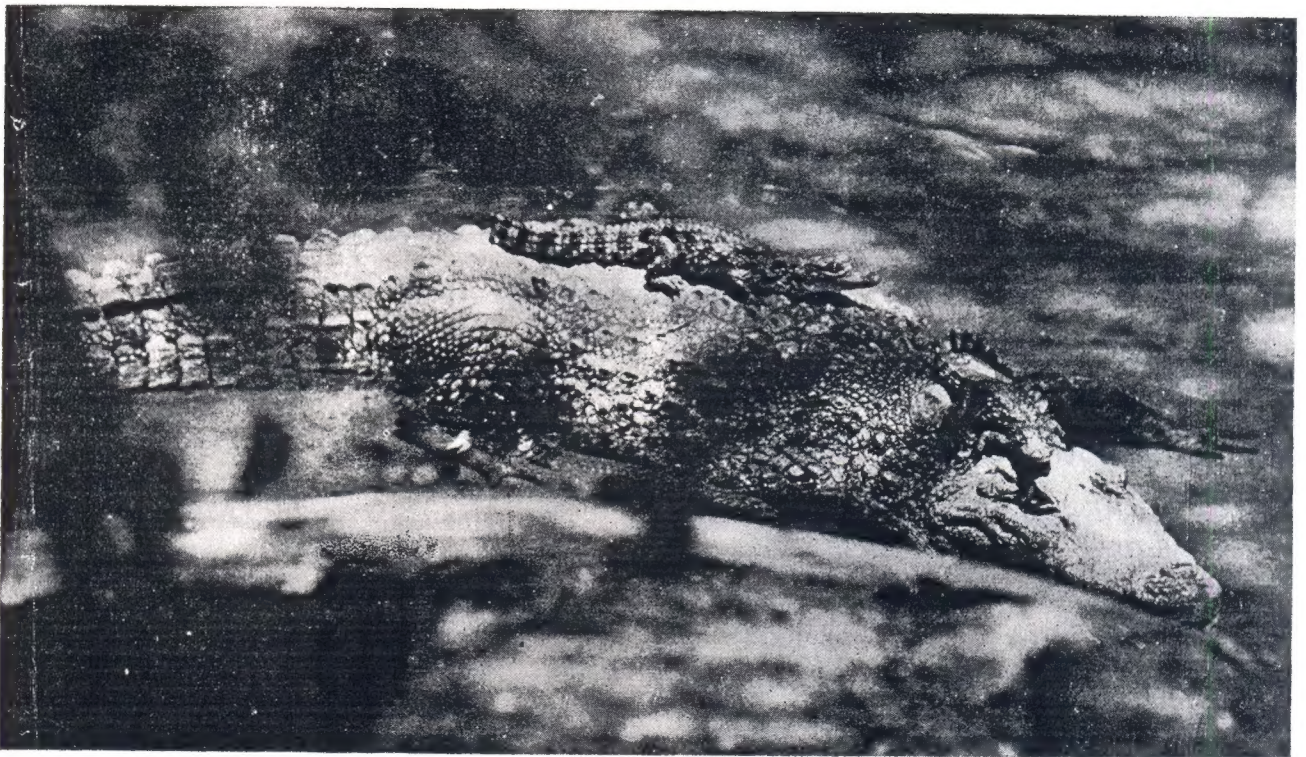
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Mugger Breeding at Madras Snake Park

correction:
March 21

This year the 8 year old, 2.25m male C. palustris from Amaravathi, Tamil Nadu, again mated successfully with the approximately 13 year old female of 1.8m in January. The female laid 15 eggs on March 15. A few days later she laid another nest of 8 eggs at the opposite end of the 150ft. walled enclosure. During the subsequent 60 days of incubation she was defensive of both sites, charging from the water if anyone went near the nests. Most of the hatching took place at night but we were lucky enough to see and photograph the female by daylight digging out eggs, gently hatching the babies with her teeth and conveying them to the pond. Communication between the parent and young and among the young was heard several times. Now, 6 weeks later, the 17 young are with their parents. The female is very protective; the male attentive but shy. Chopped fish is put for the young each evening and living fish and tadpoles released in the pond. A light over the water at night attracts insects.

In October, 1977 the Indian Wildlife Protection Act 1972 was amended and a number of reptiles received increased nominal protection. Schedule I species are those which cannot be caught, kept, transported or traded in without special permission and now includes all the monitors, most of the turtles and tortoises, the three crocodilians, Himalayan newt, Indian egg-eating snake, the two pythons and viviparous toads (Nectophrynoides). All snakes are now under schedule IV (Small Game) and a permit is required for their capture and sale. We are inviting the Governments attention to the need for extending permission to various endemic herps especially of the rain forests and Bay Islands.



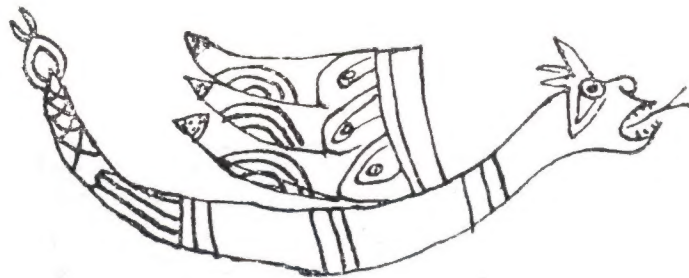
Female Mugger at the Snake Park with her brood which she actively protects

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